

**THE INFORMATION STRATEGIC PLANNING FOR MAJLIS
PERBANDARAN SUNGAI PETANI KEDAH**

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THE INFORMATION STRATEGIC PLANNING FOR MAJLIS PERBANDARAN SUNGAI PETANI KEDAH

A project report is submitted to the Division of Applied Sciences, College of Arts and
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by

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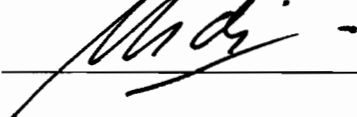
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ABSTRAK

Untuk membolehkan sesebuah organisasi itu maju ke hadapan dari segi pengimplementasian teknologi maklumat dan komunikasi, dan juga organisasi sistem maklumat, maka ianya perlu kepada pelan strategik maklumat yang mantap dan lengkap. Tujuan kajian ini dibuat adalah untuk membangunkan sebuah pelan strategik maklumat yang akan diguna pakai oleh Majlis Perbandaran Sungai Petani Kedah sebagai bahan rujukan pada masa akan datang dari segi pembangunan teknologi maklumat dan komunikasi yang menyeluruh. Kaedah yang digunakan di dalam kajian ini adalah berdasarkan kepada cadangan dari MAMPU. MAMPU telah memperkenalkan garis panduan kepada semua agensi kerajaan untuk mengguna pakai panduan pelan strategik untuk membangunkan pelan strategik maklumat masing-masing. Dengan menggunakan kaedah ini, ianya diharap dapat membantu Majlis Perbandaran Sungai Petani Kedah dalam mengenal pasti keadaan semasa persekitaran teknologi maklumat dan komunikasi iaitu masalah-masalah yang sedang dihadapi dan mencadangkan penambahbaikan kepada persekitaran teknologi maklumat dan komunikasi untuk melancarkan lagi perjalanan teknologi maklumat dan komunikasi di Majlis Perbandaran Sungai Petani Kedah. Oleh itu, sangat diharapkan agar teknologi maklumat dan komunikasi yang dihasilkan dari kajian ini dapat diimplementasi sepenuhnya sebagai garis panduan ke arah untuk memajukan lagi teknologi maklumat dan komunikasi di Majlis Perbandaran Sungai Petani Kedah.

ABSTRACT

To enable an organization advanced in terms of ICT implementation and the IS organization, it is necessary to a sound and complete ISP. The purpose of this study was to develop a strategic information plan that will be adopted by the Majlis Perbandaran Sungai Petani Kedah as a reference for the future in terms of overall ICT development. Methodology used in this study is based on the recommendations of MAMPU. MAMPU has introduced its guideline to all government agencies to adopt the strategic plan to guide in the development of their information strategic plan. Using this methodology, it is expected to assist the Majlis Perbandaran Sungai Petani Kedah to identify the current state of the ICT environment of the problems being faced and recommend improvements to the ICT environment to facilitate ICT implementation at the Majlis Perbandaran Sungai Petani Kedah. Therefore, it is expected that the ISP is produced from this study can be fully implemented as a guidance to further develop ICT for the Majlis Perbandaran Sungai Petani Kedah.

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LIST OF ABBREVIATIONS

CIO	Chief Information Officer
CTO	Chief Technology Officer
HiLRA	The Malaysian Public Sector Information High-Level Risk Assessment
HRMIS	Human Resource Management Information System
ICT	Information and Communication Technology
IS	Information System
ISP	Information Strategic Planning
IT	Information Technology
MAMPU	Malaysian Administrative Modernization Planning Unit
MyRAM	The Malaysian Public Sector Information Security Risk Assessment Methodology
PC	Personal Computer
SISP	Strategic Information System Planning
VPN	Virtual Private Network
YDP	Yang Di Pertua

CHAPTER 1

INTRODUCTION

Information Technology (IT) and Information System (IS) now a day, are very important in terms of to simplify and accelerating our jobs. Many government agencies out there are very dependant on Information Technology (IT) and Information System (IS) to perform their business strategy and to achieve their vision and mission. IT is a catalyst of the fundamental changing in the strategic operations and management of the organization (Turban *et. al.*, 2007). According to Laudon and Laudon (2006), saying that IS contain information about peoples, places, and things within the organization or in environment surrounding it.

Information Strategic Plan (ISP) is the process of analyzing the information requirements, agreeing how the information is to be provided in accordance with technical and management policies, planning how to implement the systems and the infrastructure to support them, and how to control the Information System overtime, (Bunn *et. al.*, 1989). The implementation of Information Strategic Plan (ISP) is to ensure that the organization can achieve its business strategies and can give better solution to the customers.

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REFERENCES

- Capron, H.L. (1996). *Computer Tools For An Information Age*. The Benjamin / Cummings Publishing Company, Inc.
- Lucas, H.C. (2000). *Information Technology For Management*. Irwin McGraw-Hill.
- Hair, J.F. et. al. (2003). *Research Methods For Business*. John Wiley & Sons, Ltd.
- Andreu, R. et. al. (1992). *Information Systems Strategic Planning*. England : Bookcraft Ltd.
- Laudon, K. C., & Laudon, J.P. (2006). *Management Information Systems: Managing The Digital Firm*. New Jersey: Pearson Prentice Hall.
- Turban, E., Leidner, D., McLean, E., & Wetherbe, J. (2007). *Information Technology For Management: Transforming Organizations In The Digital Economy*. Asia: John Wiley & Sons, Inc.
- McLeod, R. (1995). *Management Information System*. New Jersey : Prentice Hall.
- Luftman, et. al. (2004). *Managing The Information Technology Resource*. London : Pearson Education.
- MAMPU (2003). *The Malaysian Public Sector Information and Communication Technology (ICT) Strategic Plan Guide*. Retrieved January 06, 2008 From <http://www.mampu.gov.my>.
- Bunn, G., Bartlett, C., & McLean, D. (1989). *The Information Systems Guides: Strategic Planning For Information Systems: Ensuring That The Business Benefits*. London : John Wiley & Sons, Ltd.
- Hubona, G.S. and Blanton, J.E. (1996). *Evaluating System Design Features*. International Journal Of Human-Computing Study, 44(1), 93-118.

- Ojiako, G. U., Johansen, D. E., & Greenwood, D. J. (2004). *The Impact Of Strategy On ICT Projects*. Journal Of Information And Communication Technology, Volume 3 (Number 2).
- Zulkhairi M. Dahalin (2005). *Implementing Information Strategy Planning In An Enterprise*. Sintok: Universiti Utara Malaysia.
- Kim, D.H. & Cho, Y.Z. (2000). *Design And Implementation Of Network Management Systems For Integrated Management Of LANs And WANs*. International Journal Of Network Management, 10, 135-143.
- Cassidy, A. (1998). *A Practical Guide To: Information Systems Strategic Planning*. St. Lucie Press.
- Cassidy, A. (2006). *A Practical Guide To: Information Systems Strategic Planning*. New York: Auerbach Publications.
- Mokhtar Mohd. Yusof (2006). *Managing IT In Organizations: A Multiperspectives Framework*. Ayer Keroh, Melaka: Kolej Universiti Teknikal Kebangsaan Malaysia.
- Ward and Peppard (2002). *Strategic Planning For Information System*. England : John Wiley and Sons, Ltd.
- Mendonca, J. (2004). *Organizational Impact Of Infromation Technology: A Leadership Course For IT*. Proceedings Of SIGITE 2004.
- Pant, S., & Hsu, Cheng (1995). *Strategic Information System Planning*. Information Resources Management Association International Conference, May 21-24, 1995.
- Motlojopane, I. and Brown, I. (2004). *Strategic Business-IT Alignment And Factors Of Influence: A Case Study In A Public Tertiary Education Institution*, Proceeding Of SAICSIT 2004, 147-156.

- Pfeiffer, J.W. (1991). *Strategic Planning: Selected Readings*. California : Pfeiffer & Company.
- Ward, J., Griffiths, P. and Whitmore, P. (1990). *Strategic Planning For Information Systems*. John Wiley & Sons.
- Boar, B. (2001). *The Art Of Strategic Planning For Information Technology*. 2nd Ed. John Wiley & Sons.
- Eliot, L.B. (1991). *Information System Strategic Planning*. 1st Ed. Computer Technology Research Corp.
- Kesner, R.M. (1988). *Information System: A Strategic Approach To Planning And Implementation*. American Library Association.
- Karger, D.W. (1991). *Strategic Planning And Management: The Key To Corporate Success*. Marcel Dekker, Inc.
- Martin, J. (1990). *Information Engineering, Book II: Planning And Analysis*. Prentice-Hall Inc.: USA
- Martin, J. (1994). *Enterprise Engineering: The Key To Corporate Survival*. Volume 1. Savant Institute: England
- McFalan, F.W. and McKenny, J.L. (1983). *Corporate Information Systems Management*. Irwin Inc.: USA
- Spewak, S.H. (1992). *Enterprise Architecture Planning: Developing A Blueprint For Data, Applications And Technology*. QED Publishing Group: USA
- Tozer, E.E. (1996). *Strategic IS/IT Planning*. Butterworth-Heinemann: USA
- Ward, J. and Griffiths, P. (1996). *Strategic Planning For Information Systems 2nd Ed..* John Wiley & Sons: England

Zulkhairi M. Dahalin (2002). *Strategic Application Portfolio In SMEs*. Malaysian Management Journal 6 (1&2). 1-15.

Institute Of Professional Advancement (1995). *Information Technology Planning*. Kuala Lumpur.

Eliot, L.B. (1991). *Information Systems Strategic Planning*. Computer Technology Research Corp. : USA

Ramnath and Landsberge (2005). *IT – Enabled Sense and Response Strategies In Complex Public Organizations*. Communication Of The ACM. May 2005/Vol 48, No. 5

Walter and Scott (2006). *Management Issues Of The Internet / Web Systems*. Communication Of The ACM. March 2006/Vol 49, No. 3

Maddison and Darnton (1996). *Information Systems In Organizations. Improving Business Processes*. Chapman & Hall.

Renken, J. (2004). *Developing An IS / ICT Management Capability Maturity Framework*. Proceeding Of The 2004 Annual Research Conference Of The South African Institute Of Computer Scientist And Information Technologies On ICT Research In Developing Countries SALCSIT '04.

Jabatan Perdana Menteri (2003). *Garis Panduan Mengenai Tatacara Penggunaan Internet Dan Mel Elektronik Di Agensi-Agensi Kerajaan*. Pekeliling Kemajuan Pentadbiran Awam Bilangan 1.

Jabatan Perdana Menteri (2005). *Garis Panduan Penilaian Risiko Keselamatan Maklumat Sektor Awam*. Surat Pekeliling Am Bilangan 6.

MAMPU (2004). *Information Technologies Strategic Plan (ISP) For Government Agencies*. ISP Framework Version 1.0.

MAMPU (2003). *Standards, Policies And Guidelines – Malaysian Public Sector ICT Strategic Plan*. Guide Version 1.0.

MAMPU (2005a). The Malaysian Public Sector Information Security Risk Assessment (HiLRA).

MAMPU (2005b). The Malaysian Public Sector Information Security High Level Risk Assessment Methodology (MyRAM).

MAMPU (2005c). The Malaysian Public Sector Information Security Risk Assessment Methodology (MyRAM) Handbook.